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ABSTRACT

Two types of studies are now being used as part of a new Federal strategy for evaluating Elementary Secondary Education Act Title I programs. In the first, broad descriptive information is collected on a national scale. In the second, as implemented in the Instructional Dimensions Study (IDS) the effects of Title I programs are focused upon at the district level. It was hoped by policy makers that the two studies would satisfy the following goals: first, data from the national survey could be used to help interpret the generalizability of the IDS findings and evaluate similarities and differences between districts in the special IDS and representative survey sample; second, data from IDS could be used to evaluate the degree to which practices reported in widespread use showed promise. The strengths and weaknesses of this strategy are discussed in this paper. The characteristics of districts and programs from the two study samples are compared. In addition, the extent to which data from the two studies could be integrated is discussed. Specific issues relating to Title I evaluation are examined on the basis of data from the two studies. In addition, general observations on the effectiveness of Title I programs are offered. (Author/GC)

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The Relationship of the Instructional Dimensions Study to the NIE Survey of Compensatory Education

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The Relationship of the Instructional Dimensions Study to the NIE Survey of Compensatory Education

Past Federal examinations of the effectiveness of compensatory education programs have typically been large scale, national evaluation efforts designed to provide a summary assessment of program impact. NIE, in its approach to evaluating compensatory instruction, rejected this strategy as inappropriate for a number of reasons and chose instead to examine the effects of compensatory education services through the more focused approach of the Instructional Dimensions Study (IDS). As background for, and a complement to the IDS, the NIE National Survey of Compensatory Education obtained broad descriptive information on services being provided and on their specific characteristics. In conjunction it was hoped that the two studies would meet the following ends: first, data from the National Survey could be used to help interpret the generalizability of the IDS findings and evaluate similarities and differences between districts in the special IDS and representative survey samples; second, data from IDS could be used to evaluate the degree to which practices reported as in widespread use by the survey showed promise for being effective.

The purpose of this paper is to discuss strengths and weaknesses of this strategy and to evaluate how well it worked for us. First, we will discuss and compare the characteristics of districts and programs in the two samples. Second, we will discuss the extent to which we were able to integrate the data and make general statements about the effectiveness of current compensatory educational practices.

Sample Comparisons

The NIE National Survey was designed to provide information on a wide variety of topics related to local Title I programs, including the characteristics of instructional services. The population from which districts were sampled was defined as all operating public school districts in the continental United States which received Title I funds, and which had at least one grade in the range K-8. The districts were stratified on the three dimensions of enrollment size, regional location, and receipt of State compensatory education funding. Three enrollment or size categories were established with cutting points at the 33.3% and 66.6% of number of students: Category 1—lowest third, enrollment less than 4,359; Category 2—middle third, enrollment from 4,359 through 17,628; and Category 3—highest third, enrollment above 17,628. For regional location, four categories based on Census Bureau definitions were used; Northeast, South, North Central, and West. The two categories under State compensatory education funding for the district were (1) presence of State compensatory education funds, and (2) absence of State compensatory funds.

The sample selection strategy was designed to allow estimates from the data on both a per-district and a per-pupil basis. The sample was thus selected to ensure approximately equal reliability for both types of estimates. The probabilities of selection of districts for the sample were chosen as a compromise between the extremes of equal probability and probabilities proportional to size. One hundred school districts were selected on this basis. Within districts, a variety of respondents were interviewed, including two teacher samples.

The first teacher sample was selected by compiling lists of all teachers in compensatory education schools who had responsibility for taking attendance and who had at least one compensatory education student in the classroom. The sample selected from this list allowed accurate estimates of the number and characteristics of compensatory education students. The second teacher sample was selected by compiling lists of all teachers who actually provided Title I and/or State funded compensatory instruction. The data collected from the sample of these teachers permitted an accurate description of the characteristics of the instructional services delivered to compensatory education students.

While some public records and documents were collected, most of the data were gathered through face-to-face interviews ranging in duration from 30 minutes to 2 1/2 hours. The interviews were conducted during the 1975-76 school year and the response rate for these interviews was 99.4%.

The IDS and national survey school districts can be compared in terms of a variety of features. We will present a few of the demographic and program comparisons that seem most relevant to us.

Demographic Characteristics

Urban, rural, and suburban districts were included in the IDS study, although the sample was not regionally representative, being concentrated in the North Central, Mid-Atlantic, and South Atlantic regions. In terms of other demographic characteristics, however, such as size, number of schools, and percent low-income, the two samples clearly overlap considerably and it does not appear that the districts studied in the IDS were particularly unusual along any of these dimensions. Although it appears that the IDS sample is limited in range of low-income, further

examination of the survey data indicates that the numbers represented in IDS reflects central tendency values in the survey. In the survey the low-income median was 15%, the mean was 24%.

TABLE I: Demographic Characteristics

	IDS	National Survey
School population	5,000-240,000	100-500,000
# of schools	10- 248	1 - 650
% low-income	5% - 34%	2% - 77%

Program Characteristics

Six compensatory program characteristics were examined: services offered, per-pupil expenditure, class size, instructional time, teacher characteristics, and criteria for student selection.

Although the IDS districts appeared overall to offer a wider range of services than Title I districts nationally, they clearly reflected the national focus on the basic skills area of reading, language arts, and mathematics.

TABLE II.

PERCENTAGE OF INSTRUCTIONAL SERVICES FUNDED WHOLLY OR PARTIALLY BY TITLE I IN THE INSTRUCTIONAL DIMENSIONS STUDY AND IN ALL TITLE I DISTRICTS

	Study Districts Offering Services	Title I Districts Offering Services*
Preschool/kindergarten	71.4	38.1
General enrichment	14.3	8.5
Follow Through	7.1	3.8
Health/nutrition	35.7	1.3
Remedial reading	71.4	69.1
Mathematics	85.7	45.0
Language arts/communication skills	71.4	69.1
English as a second language	14.3	10.2
Special education/learning disabilities	21.4	7.8
Social/cultural studies	7.1	1.8
Science	7.1	1.2

Title I instructional per-pupil expenditures in the IDS districts were also within the national range, although on average greater than those reported by the survey. According to the survey data, approximately 41% of Title I districts have instructional expenditures equal to or greater than the $300 average in the IDS districts.

TABLE III: Title I Expenditures

	IDS	National Survey
Total Title I PPE	$451 ($300 - $795)	$240 ($100 - $1,000)
Title I Inst. PPE	$301	$213

Class size and instructional time were almost identical.

TABLE IV: Class Size

	IDS	National Survey
Reading		
1st grade	8.5	8
3rd grade	9.6	8
Mathematics		
1st grade	11.4	14
3rd grade	9.0	14

TABLE V: Instructional Time

	IDS	National Survey
Reading		
1st grade	4 hrs. 36 mins.	4 hrs. 11 mins.
3rd grade	4 hrs. 6 mins.	4 hrs.
Mathematics		
1st grade	3 hrs. 48 mins.	3 hrs.
3rd grade	3 hrs.	3 hrs. 21 mins.

Teacher characteristics were similar in both studies. In special supplemental classes compensatory education students were frequently taught by teachers who were specialists, e.g., taught in only one subject area, with advanced degrees. Compensatory Education teachers in both samples had an average of about 10 years teaching experience.

Finally, procedures and criteria for selecting students to receive Title I services were virtually identical. In both studies, districts reported using Census data, AFDC, and/or Free Lunch counts to determine school eligibility and selection. Student eligibility and participation are determined primarily on the basis of standardized achievement test scores and teacher judgment. IDS districts report serving an average of 52% of eligible students whereas the district average percentage of eligibles served from the national survey is 57%.

We wish we could say that the classroom teaching practices reported were also similar. However, the data we have unfortunately is not adequate for providing such an comparison. This is an important problem that we will return to later.

What can we conclude from these comparisons? Clearly, we cannot say that the IDS sample meets the standards for national representativeness which we painstakingly built into the survey. Nonetheless, because the samples are similar in a number of demographic and general program features, we feel comfortable in concluding that the 14 IDS districts are not a unique sample and that findings from programs in these districts have definite implications beyond the specific sites examined. This does not mean that we would assert that achievement gains reported by those districts are, in fact, typical. Rather, the similarities reported suggest to us only that there is no clear and practical reason why other districts could not function similarly and that practices found to be effective could not for practical reasons be implemented elsewhere.

Evaluating the Effectiveness of Current Compensatory Practices

The IDS was designed to examine the relationship between a number of program characteristics and achievement. These characteristics were selected because of their educational and policy relevance.

Particular attention was also paid to including program characteristic data which was also being collected, albeit in less detailed fashion, in the broader national survey. Specific characteristics selected for linking the two studies were setting, time, instructional processes, and cost. The IDS was intended to provide evaluative data on how each of these related to achievement. The survey was designed to describe the incidence, and in some cases, the exact nature of each of these in current Title I projects. Together, we hoped to be able to build a picture of the degree to which effective practices are currently in use.

One problem which we had to face right from the beginning was an uncooperative schedule. The study designs had to be developed almost simultaneously and neither was able to benefit from the findings or mishaps of the other. If we had more flexibility it would have been preferable to have had our IDS findings before implementing the survey. However, this was not the case, and our subsequent attempts at integrating the findings and drawing overall conclusions were limited by this.

Let's start with an area of success — the question of setting. As indicated by the previous papers, the effects of instruction in pull-out and mainstream settings emerged as a question of considerable interest to a variety of audiences. At the start of our research, considerable emotion, but little empirical data, existed on the prevalence of these practices, let alone their educational implications. In the survey, we, therefore, gathered information on the prevalence of pull-out and mainstream programs. This data proved to be not only of interest in and of itself, but also of considerable importance given the IDS results. The national survey showed that 75% of the children in compensatory reading programs are pulled out of their regular classrooms, and 44% of

the children in compensatory mathematics are pulled out. In first grade, the survey indicated that pull-out services were delivered to 64% of the compensatory education students receiving reading and 28% of those receiving mathematics. In third grade, the equivalent figures are 74% and 51% respectively.

Furthermore, analyses which more closely examined the characteristics of pull-out instruction showed that pull-out programs were not necessarily of higher quality in other respects. For example, there were no significant differences in the percentage of instructional time devoted to compensatory instruction between pull-out and mainstream classrooms. In addition, the survey data suggest that students in pull-out programs are twice as likely as students in mainstream programs to miss regular instruction in the subject for which they are receiving the compensatory instruction. Our examination of setting was, we feel, greatly facilitated by being able to combine data from the two studies. Without the survey data, we would have been far less able to judge the importance of IDS results and vice-versa.

A second area where we attempted to integrate data from both studies was amount of time. We singled out this aspect of instruction because of the growing body of research findings indicating that amount of time is positively related to achievement gains. Actually, in the IDS time was examined as one aspect of a more complex and encompassing variable which LRDC has called "opportunity." This included minutes per-week of instruction, class size, time on task, and overlap between curriculum and test content. Survey data was available only for some of these variables. As mentioned earlier, teachers in both studies reported that students spent quite similar amounts of time in compensatory instruction. Given

the IDS findings that time in compensatory instruction is important, this should be cause for some cautious optimism about typical compensatory instructional programs.

On the other hand, one of the most important aspects of "opportunity" — overlap between curricular and test content — is an area where the link to the survey data cannot be made. First, it would not make sense to examine the overlap between instructional content and the CTBS nationally, since that is only one of many tests used for evaluation purposes.

Second, answering the broader question of the substantive overlap between instructional materials and the tests used to evaluate programs is clearly impractical on a national basis. The process described by Lee Poyner would have to be done separately for each test used by our districts and schools. Parenthetically, we might note that we did make an effort in that direction in the survey. We collected the names of books and instructional materials as well as of the tests used for evaluation purposes from our respondents, but its not clear that anything can be done with this information. On the one hand, it is unfortunate that information on overlap cannot be looked at more broadly. However, our findings do provide additional support for our initial decision not to conduct a national study of effectiveness, since a key variable couldn't have been included.

Our experience in attempting to link instructional process data was also less successful, but, nevertheless, contains some useful lessons. Even if IDS had found significant relationships between instructional processes and achievement gains, it would have been very difficult to link those findings to the survey data. In the survey, we attempted to obtain information on the incidence of various individualized practices

through a series of interview questions for compensatory education teachers. Although we tried very hard to make the questions neutral, the responses suggest that teachers answered in terms of the "right" answers. For example, large majorities indicated that they used alternative learning paths and sequencing and individual or small group pacing in their compensatory classes. Such data has to be viewed with some skepticism as an indicator of what actually takes place in compensatory classrooms throughout the country. This experience clearly suggests that the survey approach is not adequate for research attempting to carefully examine the relationship between processes and outcomes. Instead, a variety of data collection methods, such as those employed in IDS are necessary to provide in-depth, convergent information on classroom practices.

The fourth area selected for linking data from the two studies was costs. Many previous cost-benefit studies of educational programs have been hampered by lack of data on those variables intervening between inputs ($) and outputs (student achievement). This is a problem because the same amount of money may buy a variety of different resources which are used for different types of services. Both the survey and IDS were designed to fill some of these gaps. The survey collected budget and expenditure information on Title I programs from applications and financial statements. This data was then used both to estimate Title I per-pupil expenditures and to analyze the relationship between variations in expenditures and services delivered. In addition to collecting comparable expenditure data, IDS collected more detailed resource utilization information in order to examine how specific resource allocation decisions are related to program effectiveness.

As noted earlier, the Title I per-pupil expenditure figures for the IDS districts with more effective programs are not out of the

range of national expenditures. Since the achievement gains in these districts were so impressive, the potential for effectiveness of current practice seems strengthened. Before this is considered a cause for much rejoicing, however, we should point out some of the problems and findings from the cost analyses. These analyses suggest the limited value of being able to make such a statement.

The IDS analyses did not find any clear relationship between particular combinations of resources and program effectiveness. Nor do the findings support a general conclusion that more expensive programs produce higher achievement gains.

It is perhaps not surprising that problems were also encountered in attempting to use the survey data to analyze the relationship between expenditures and services. First, we should note that districts do not typically file financial statements which account for expenditures by subject area of instruction. Since the survey was limited to fiscal data available from secondary documents, only estimates of projected instructional area expenditures from Title I budgets were collected. These projected dollar amounts for reading and mathematics programs were found to be only weakly related to either the number of students served or the time spent in instruction in these areas.

Even calculating total Title I, or Title I instructional PPE raised problems. For example, our original PPE estimates used the number of participants reported on Title I applications. However, comparisons with the counts of participants based on our teacher sample indicated that the applications underestimated the number of participants. Thus, PPE figures had to be revised downward.

In examining total Title I expenditures, we did find, not surprisingly, that total expenditures were closely related to the number of compensatory instructional staff hired as well as to the numbers of students provided with compensatory instruction in various areas. Some additional analyses also suggested some interesting trade-offs between the type of compensatory staff hired and the amount of time provided to students in compensatory instruction. Basically, districts hiring less well educated (and, therefore, lower paid personnel) scheduled more hours of compensatory instruction. In general, however, these analyses showed that there are no clear answers even to the relatively simple question of the relationship between expenditures and services, much less student outcomes. Perhaps the major contribution of our efforts in this area may be a negative one. Simple cost-benefit analyses are not likely to provide any single straightforward answer to national policymakers.

In conclusion, while our efforts to integrate data from the two studies were not as successful as we hoped, we believe that our experience with the approach we adopted does support our decision not to attempt a national survey of effectiveness of Title I programs.